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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,053	01/08/2002	Norbert Lauinger	017386-0115	7173

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EXAMINER

STOCK JR, GORDON J

ART UNIT PAPER NUMBER

2877

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,053

Applicant(s)

LAUINGER, NORBERT

Examiner

Gordon J Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Preliminary Amendments filed on January 8, 2002; April 11, 2002; and May 20, 2002 have been entered into the file.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters 4 and 5 of Fig. 1 have both been used to designate the same component; and reference characters 11', 10', and 12 have been used to designate the same component. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 3, 6-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lauinger et al. (5,982,483)** in view of **Tomioka et al.(5,088,816)**.

As to **claim 1**, Lauinger discloses a device for high definition measurement of intervals in the focused image produced by a lens-aperture diaphragm system comprising: a lens imaging an object space; a diffractive hexagonal 3d grating optical modulator in the image plane of the lens to form at least one trichromatic RGB diffraction pattern; a photoelectric receiver arrangement arranged in the near field downstream of the modulator, having individual receivers configured

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to generate electric signals in accordance with centrosymmetrically trichromatic RGB diffraction orders of the diffraction pattern; evaluation device for electric signals generated by the individual receivers (Figs. 1, 3, and 5b; col. 4, lines 33-47; col. 5, lines 37-65; col. 6, lines 53-67; col. 7, lines 1-40; col. 8, lines 43-65). However, Lauinger is silent concerning at least one diffusion plate arranged in a pupillary plane. Tomioka in a cell imaging device teaches using a diffusion plate to ensure uniform background radiation and a clear image across the field of view. It would be obvious to one skilled in the art at the time the invention was made to have Lauinger's device comprise at least one diffusion plate in the pupillary plane of the lens to ensure a uniform background radiation and therefore a clear image in the field of view.

As to **claim 3**, Lauinger in view of Tomioka disclose everything as above (see **claim 1**). However, they are silent concerning the diffusion characteristic of the plate selected to provide a uniform background radiation. As above Tomioka teaches the use of a diffusion plate to provide uniform background radiation. Therefore it would be obvious to one skilled in the art at the time the invention was made that a diffusion plate had a selected diffusion characteristic to provide uniform background radiation for the plate does provide uniform background radiation.

As for **claims 6-9**, Lauinger in view of Tomioka disclose everything as above (see **claim 1**). In addition, the individual receivers assigned to the same chromatic diffraction order in the RGB diffraction pattern and set to an identical spectral sensitivity for a radiation source emitting white light are interconnected to form a local chromatically additive brightness value for each chromatic diffraction order and the evaluation device includes a comparison arrangement for determining which trichromatic diffraction pattern has the best agreement between the local

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chromatically additive brightness values (Figs. 1, 3, and 5b; col. 6, lines 53-67; col. 7, lines 1-25; col. 8, lines 7-30; col. 9, lines 60-65; col. 10, lines 1-10).

4. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lauinger et al. (5,982,483)** in view of **Tomioka et al. (5,088,816)** as applied to **claim 1** above, and further in view of **Ostermeier (4,634,248)**.

As to **claim 2**, Lauinger in view of Tomioka disclose everything as above (see **claim 1**). However, they are silent concerning the diffusion plate's structure. Ostermeier in a camera system teaches that a light-diffusing plate may be a grating (col. 1, lines 59-63). It would have been obvious to one skilled in the art at the time the invention was made to have the diffusion plate have a grating structure since it was known in the art that light-diffusing plates have grating structures.

5. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lauinger et al. (5,982,483)** in view of **Tomioka et al. (5,088,816)** as applied to **claim 1** above, and further in view of **Bawolek et al. (5,914,749)**.

As to **claims 4 and 5**, Lauinger in view of Tomioka disclose everything as above (see **claim 1**). In addition, Lauinger teaches improving the accuracy of imaging to have the imaging system be similar to human vision (col. 2, lines 45-60). Bawolek in an image sensor application teaches that human vision is within the visible spectrum (400-700 nm). Therefore, it would be obvious to one skilled in the art to have the lens, diffusion plate, and the modulator limited to the visible region of 400-700nm in order to model human vision.

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6. **Claims 10, 14, 15, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lauinger et al. (5,982,483)** in view of **Tomioka et al.(5,088,816)**, and further in view of **Sasaki (4,965,663)**.

As to **claims 10 and 14**, Lauinger in view of Tomioka disclose everything as above (see **claim 1**). In addition, Lauinger discloses using local trichromatic additive values and maximum brightness values and using a white reference (col. 7, lines 1-35; col. 8, lines 1-10; col. 9, 60-67; col. 10, lines 1-10). However, Lauinger is silent concerning the specific steps of using a white standard signal. Sasaki discloses a method of correcting color imaging systems using a white standard in order to ensure accurate color characterization and color imaging (cols. 3-8). Therefore, it would be obvious to one skilled in the art at the time the invention was made to implement Sasaki's method of using a white standard in Lauinger's apparatus to ensure accurate color characterization and color imaging.

As to **claims 15 and 17**, Lauinger discloses a method for high definition measurement of intervals in the focused image produced by a lens-aperture diaphragm system comprising: providing a lens imaging an object space; a diffractive hexagonal 3d grating optical modulator in the image plane of the lens to form at least one trichromatic RGB diffraction pattern; a photoelectric receiver arrangement arranged in the near field downstream of the modulator, having individual receivers configured to generate electric signals in accordance with centrosymmetrically trichromatic RGB diffraction orders of the diffraction pattern; evaluation device for electric signals generated by the individual receivers (Figs. 1, 3, and 5b; col. 4, lines 33-47; col. 5, lines 37-65; col. 6, lines 53-67; col. 7, lines 1-40; col. 8, lines 43-65). However, Lauinger is silent concerning at least one diffusion plate arranged in a pupillary plane. Tomioka

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in a cell imaging device teaches using a diffusion plate to ensure uniform background radiation and a clear image across the field of view. It would be obvious to one skilled in the art at the time the invention was made to have Lauinger's device comprise at least one diffusion plate in the pupillary plane of the lens to ensure a uniform background radiation and therefore a clear image in the field of view.

Lauinger discloses using local trichromatic additive values and maximum brightness values with a null brightness edge and using a white reference (col. 7, lines 1-35; col. 8, lines 1-10; col. 9, 60-67; col. 10, lines 1-10). However, Lauinger is silent concerning the specific steps of using a white standard signal. Sasaki discloses a method of correcting color imaging systems using a white standard in order to ensure accurate color characterization and color imaging (cols. 3-8). Therefore, it would be obvious to one skilled in the art at the time the invention was made to implement Sasaki's method of using a white standard in Lauinger's apparatus to ensure accurate color characterization and color imaging.

7. **Claims 11-13 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lauinger et al. (5,982,483)** in view of **Tomioka et al. (5,088,816)** and further in view of **Sasaki (4,965,663)** as applied to **claims 10 and 15** above, and further in view of **Chamberlain et al. (6,411,746)**.

As to **claims 11-13**, Lauinger in view of Tomioka and Sasaki disclose everything as above (see **claim 10**). In addition, Lauinger teaches that imaging is dependent on grating constants (col. 2, lines 45-55) and that a grating constant is derived through the image's Fourier spectrum (col. 9, lines 40-45) and that grating constants are used in the development of spectral brightness curves of human daylight vision (col. 5, lines 38-50). Lauinger is silent concerning an

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adapter for varying grating constant and that the adapter will be a thermal source with controller. Chamberlain teaches in a system for thermally tuning an optical device that a grating's center wavelength may be changed by temperature and teaches a heater with controller for a grating (Fig. 2). It would be obvious to one skilled in the art at the time the invention was made to provide an adapter comprising a heater with a temperature controller in order to ensure a uniform temperature of the grating modulator to ensure a uniform grating constant and to be able to vary the grating constants due to ambient temperature fluctuations in the system.

As to **claim 16**, Lauinger in view of Tomioka and Sasaki disclose everything as above (see **claim 15**). In addition, Lauinger teaches that imaging is dependent on grating constants (col. 2, lines 45-55) and that a grating constant is derived through the image's Fourier spectrum (col. 9, lines 40-45) and that grating constants are used in the development of spectral brightness curves of human daylight vision (col. 5, lines 38-50). Lauinger is silent concerning varying grating constants. Chamberlain teaches in a system for thermally tuning an optical device that a grating's center wavelength may be changed by temperature and teaches a heater with controller for a grating (Fig. 2). It would be obvious to one skilled in the art at the time the invention was made to vary the grating constant through providing an adapter comprising a heater with a temperature controller in order to ensure a uniform temperature of the grating modulator to ensure a uniform grating constants and to be able to vary the grating constants due to ambient temperature fluctuations in the system and to guarantee the spectral brightness curves remain modeled after human daylight vision.

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Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is:

(703) 308-7722

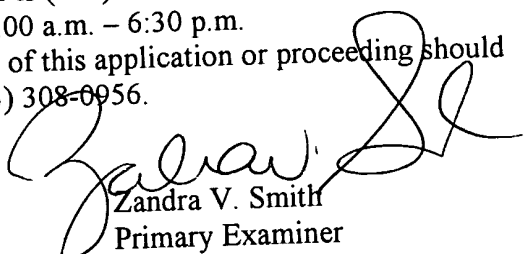
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. – 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs

December 16, 2002


Zandra V. Smith
Primary Examiner
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